

## **Comments from FuelCell Energy on the Questions published for Workshop on Strategic Plan for DG**

### **I. Scope of CEC Strategic Planning Effort**

- 1) What should be the purpose of this strategic plan?

We feel that the strategic plan ought to support the policy message articulated in Senate Bill 1928, namely "to encourage the deployment of DG that has a positive impact on air quality". Encouraging the deployment of clean DG technologies means both bridging the high cost challenge faced by new clean technologies when manufactured in small scale and enabling "plug and play" type of installations for these devices, with an end goal of making these technologies economically competitive against delivered power from the current grid infrastructure.

- 2) What technologies should be included within the scope of the Strategic Plan?

The Strategic Plan should only support the deployment of those technologies that significantly improve upon the emissions profile of best available commercial technologies today and deliver this clean power very efficiently, reducing the overall fossil fuel demand in the State. The plan should focus on those technologies that show a clear path to commercialization and sufficient funding to support their commercialization activities. FuelCell Energy's "Direct Fuel Cell" technology meets both the emissions objectives of Senate Bill 1928 and the commercialization expectations of a program designed to bridge the gap between current state and an economically competitive clean energy offering in the future.

### **II. Vision, Mission and Goals of a CEC Strategic Plan**

- 1) What should be the CEC's vision or "desired future state" for distributed generation?

Clean and efficient Distributed Resources should complement the existing grid infrastructure and central power plants, delivering a highly efficient, secure, economic and clean energy supply system for the state. To that end, the Plan should establish specific goals (i.e. 20% of all new buildings should incorporate clean and highly efficient on-site generation) for DG penetration on new and existing buildings, as well as penetration of clean and highly efficient DG in support of current distribution infrastructure.

- 2) Are the missions, goals and objectives outlined by the DOE in its DER Strategic Plan consistent with the state efforts to deploy distributed generation?

The CEC's Strategic Plan must focus on supporting technologies that are both highly efficient and very clean to align with the objectives of the DOE's DER Strategic Plan. If so, The CEC's Strategic Plan would support the following DOE objectives:

- a. Near term: Enabling the development of "next generation" clean and highly efficient distributed generation technologies by supporting the deployment of initial commercial product offerings (which are not expected to be economically competitive with the grid) and reducing the complexity of the siting process for these products.
  - b. Mid-term: Reducing clean and highly efficient distributed generation equipment costs and increasing the reliability of these new technologies by enabling the deployment of significant quantities of these commercial new technologies in the state.
- 3) Suitability for California of the DOE's goal to achieve 20% of new electricity capacity additions from distributed generation.
- DOE's goal establishes a well-supported and quantifiable goal for the CEC to adopt to communicate both leadership and commitment to clean and efficient distributed generation new technologies.

### **III. Barriers to Deployment of Distributed Generation**

- 1) Comment on the major regulatory, institutional, market or business development barriers currently impacting distributed generation deployment

Three major barriers currently impact the deployment of new clean and efficient distributed generation technologies like FuelCell Energy's power plants:

- a. First cost barriers: New clean and efficient distributed generation technologies face the challenge of high initial costs consistent with all new Disruptive Technologies. High costs result from producing products at low volumes, lower yield than anticipated on initial production runs and the amortization R&D investments among initial production units.
- b. Real public benefits streams not readily quantifiable: Clean and highly efficient distributed generation technologies generate public benefits (air pollution, security, fuel diversity and others) and overall electrical system benefits (increased reliability of grid) that are not currently taken into account when developing a cost/benefit analysis on the merits of installing these distributed resources. Widely acceptable quantification methods need to be developed for these benefits to improve the economic viability of DG projects.
- c. Installation and sitting costs: Installation of new technologies bear the additional indirect costs associated with budgeting and pricing for activities not previously conducted. These additional activities (i.e. reviewing and filling-out Rule 21 interconnection requirements for installations in PG&E's territory) consume resources and generate overhead costs that quickly erode the potential economic viability of a given project. Some of these costs will decrease in time as installation providers become more familiar with these technologies, but others such as permitting and interconnection need to be further simplified through legislation.

- 2) Characterize the issue or barrier into a concise problem statement. What activities and should be initiated to mitigate the barrier?

Recently, the CPUC and CEC collaborated on a Self-Generation Incentive Program. The program is designed to encourage the deployment of DG in CHP and renewable fuel applications. The implementation of the program, however, was left in the hands of the three IOUs that serve the state. These IOUs, however, currently have no incentive to encourage the deployment of DG in their service territories and some would argue that there are disincentives in place for IOUs to allow further deployment of DG in their territories. Administration of programs should reside with entities committed to the success of the program. Rule 21, another attempt by the CPUC and the CEC to streamline interconnection issues is again being administered by the individual IOUs, which have little incentive in actively supporting self-generation within their service territory.

#### **IV. Policies to Develop for the Strategic Plan**

- 1)
- 2)
- 3)
- 4)
- 5) Should the Building Energy Efficiency Standards (Title 24) be modified to encourage distributed generation in new construction and major remodels?

We support such a proposal as a mechanism to achieve the quantifiable objective of deploying clean and highly efficient distributed resources to address 20% of new electricity capacity additions in the state.

#### **V.**

#### **VI. Specific Distributed Generation Activities by the CEC**

- 1) **What new initiatives could be conducted by the CEC to better integrate distributed generation with the following activities:**

- a. **Research, Development and Demonstration Programs**

The CEC should manage all the state's research, development and demonstration programs, allowing it to maximize its support to targeted new emerging clean and efficient technologies with a clear path to commercialization in the short term. Programs SHOULD BE FOCUSED ON DEMONSTRATIONS of replicable high-value applications that would pave the way towards commercialization of these technologies in these specific applications. Demonstration program should also include funding for testing these new technologies against prevailing siting and interconnection requirements in the state.

- b. **Renewables Program**

Many states have broaden the definition of renewables to include no-NOx emissions technologies such as FuelCell Energy power plants operating in natural gas, arguing both the emissions benefits as well as the reduced consumption of natural gas. The CEC should develop programs targeted to biomass waste producers that address both the collection and/or generation of gases from waste as well as the potential benefits of electric and heat production from these gases using efficient DG.

- c. **Title 24 Building Energy Efficiency Standards**

Clean and highly efficient distributed generation minimum content standards for certain building types should be pursued by the CEC, as a mechanism to ensure new buildings take advantage of new DG technologies and that the state achieves the DOE objective of 20% of new electricity capacity addition being generated by clean and highly efficient DG.

- d. **Energy Efficiency and Demand Responsiveness Programs**

Remote, real time aggregation and dispatching of distributed resources being utilized for on-site generation can create an additional revenue stream for new and highly efficient distributed resources likely to improve their overall economics. The CEC should enable and allow the aggregation and dispatching

of small scale DG (200kW to 5MW) as part of its demand responsiveness programs

e.

f.

**g. Outreach to Target Audiences**

CEC should target state government facilities as potential Early Adopters of these new emergent technologies as well as customer groups most likely to benefit from the deployment of specific technologies (i.e. hospitals for FuelCell Energy power plants) with seminars and other communication mechanisms to raise awareness among these groups of the potential benefits of specific technologies. Message should focus on both the specific benefits for a type of facility as well as the how to develop a DG project within their facilities.